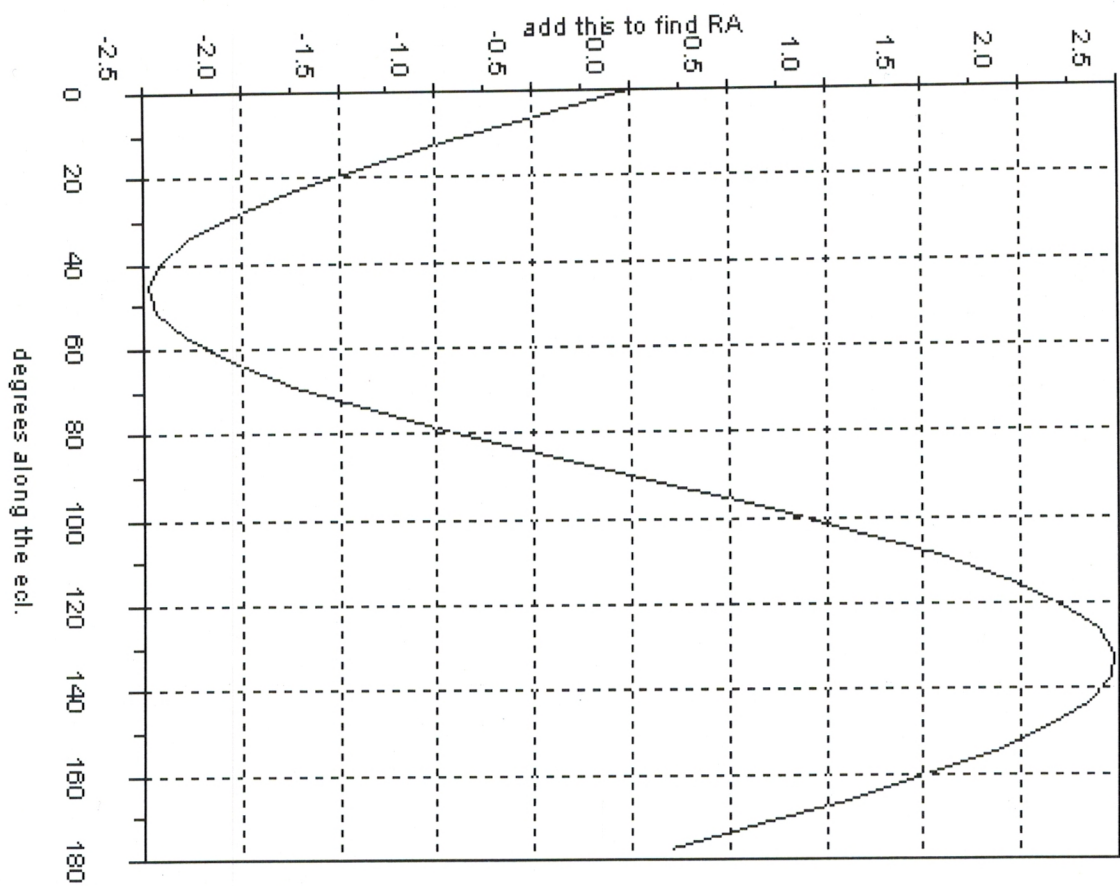
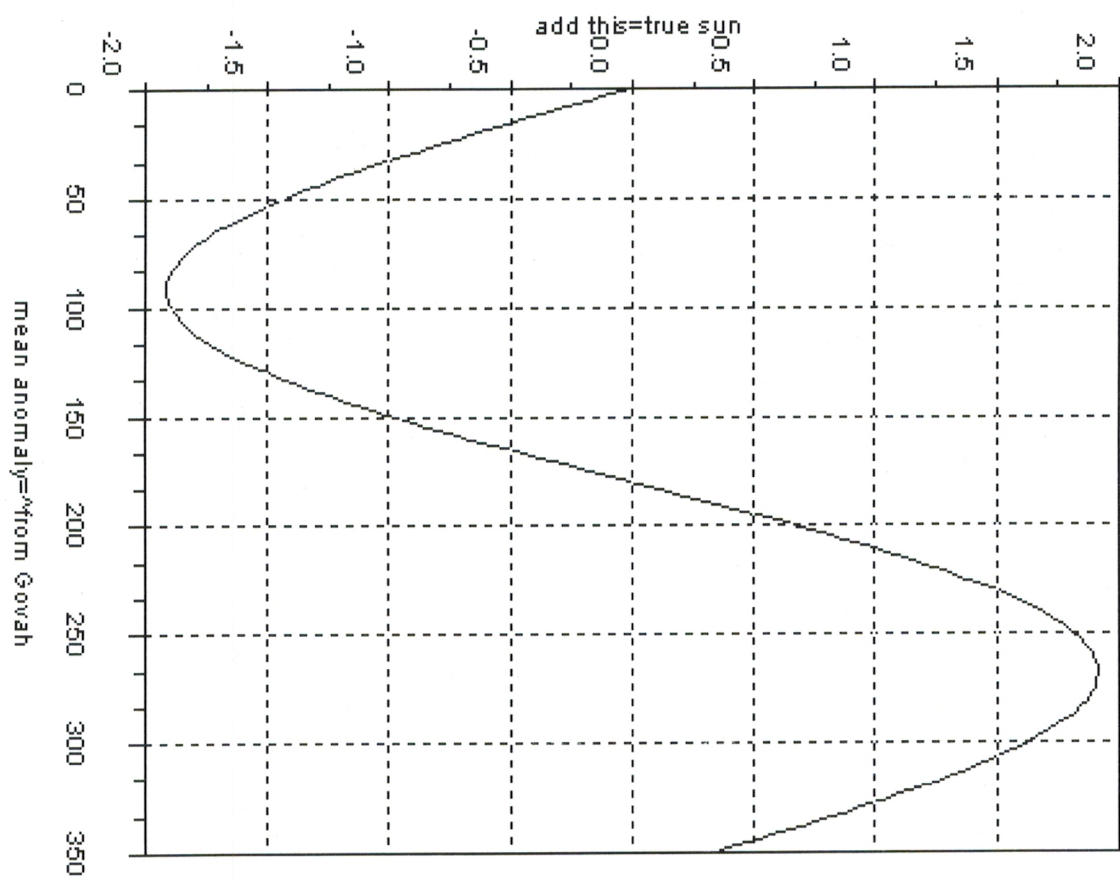
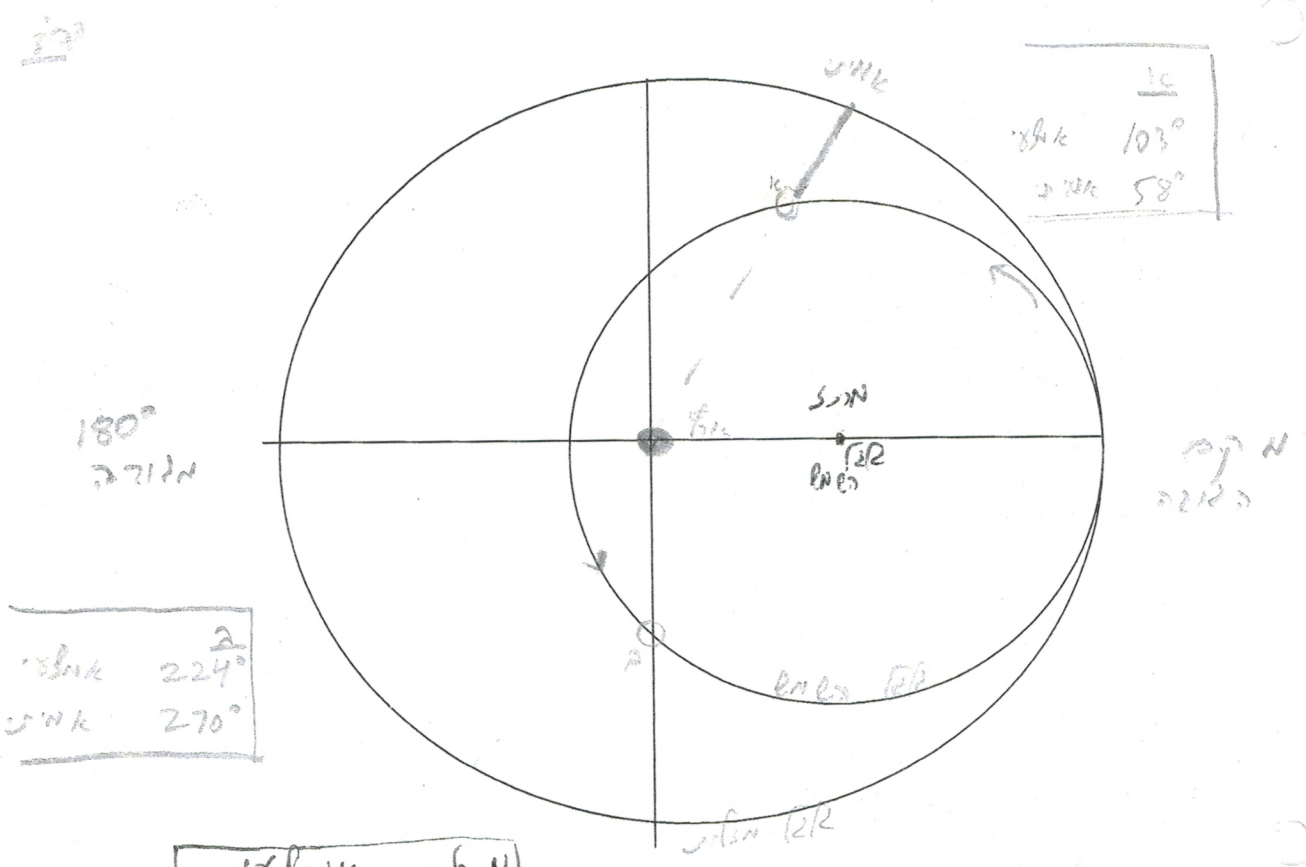


to find RA of any point on ecliptic



to find true sun from mean ecliptic sun





Days	Motion	Days	Motion	Days	Motion
100,000	284°44.0'	10,000	136°28.4'	1,000	—
200,000	209°28.0'	20,000	272°56.8'	2,000	—
300,000	134°12.0'	30,000	49°25.2'	3,000	—
400,000	58°56.0'	40,000	185°53.6'	4,000	—
500,000	343°40.1'	50,000	322°22.0'	5,000	—
600,000	268°24.1'	60,000	98°50.4'	6,000	153°53.0'
700,000	193°08.1'	70,000	235°18.8'	7,000	59°31.9'
800,000	117°52.1'	80,000	11°47.2'	8,000	325°10.7'
900,000	42°36.1'	90,000	148°15.6'	9,000	230°49.6'

100	—	10	9°51.4'	1	0°59.1'
200	—	20	19°42.8'	2	1°58.3'
300	—	30	29°34.2'	3	2°57.4'
400	—	40	39°25.6'	4	3°56.6'
500	—	50	49°16.9'	5	4°55.7'
600	231°23.3'	60	59°08.3'	6	5°54.8'
700	329°57.2'	70	68°59.7'	7	6°54.0'
800	68°31.1'	80	78°51.1'	8	7°53.1'
900	167°05.0'	90	88°42.5'	9	8°52.2'

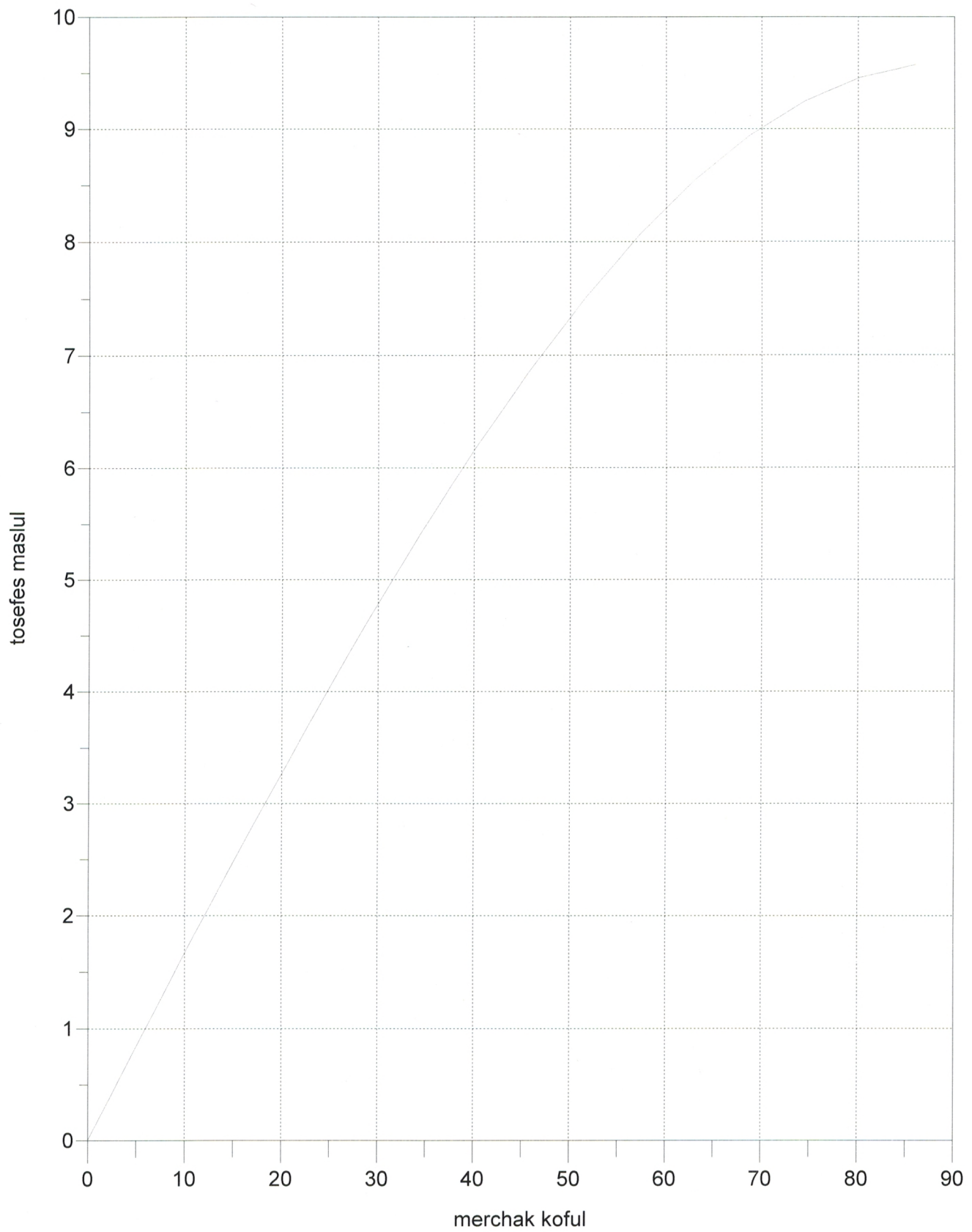
Year	Longitude	Year	Longitude	Year	Longitude
801 B.C.	53°57'	200 A.D.	71°25'	1200 A.D.	4960 97°52'
701	55°42'	300	73°10'	1300	—
601	57°27'	400	74°55'	1400	—
501	59°12'	500	76°40'	1500	—
401	60°57'	600	78°24'	1600	—
301	62°41'	700	80°09'	1700	97°37'
201	64°26'	800	81°54'	1800	99°21'
101	66°11'	900	83°39'	1900	101°06'
1 B.C.	67°56'	1000	85°23'	2000	102°51'
100 A.D.	69°40'	1100	87°08'	2100	104°36'

TABLE 5.3. Equation of Center of the Sun

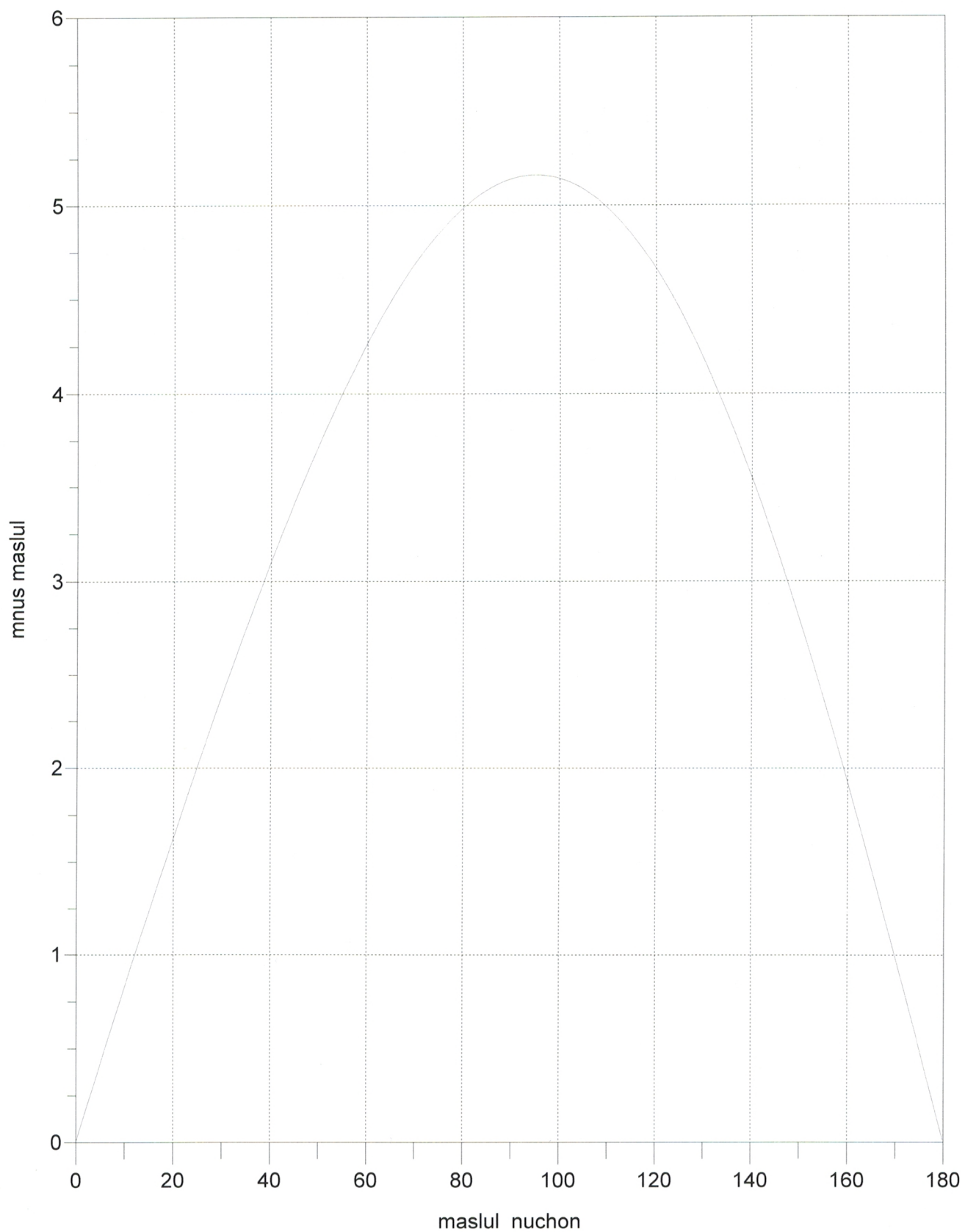
Mean Anomaly	Equation of Center	Mean Anomaly	Equation of Center
0° (360)	-(+) 0° 0'	90° (270)	-(+) 1°55'
5° (355)	0°10'	95° (265)	1°55'
10° (350)	0°19'	100° (260)	1°54'
15° (345)	0°29'	105° (255)	1°52'
20° (340)	0°38'	110° (250)	1°49'
25° (335)	0°47'	115° (245)	1°46'
30° (330)	0°56'	120° (240)	1°41'
35° (325)	1°04'	125° (235)	1°36'
40° (320)	1°12'	130° (230)	1°30'
45° (315)	1°19'	135° (225)	1°23'
50° (310)	1°26'	140° (220)	1°16'
55° (305)	1°32'	145° (215)	1°08'
60° (300)	1°38'	150° (210)	0°59'
65° (295)	1°43'	155° (205)	—
70° (290)	1°47'	160° (200)	—
75° (285)	1°50'	165° (195)	—
80° (280)	1°52'	170° (190)	—
85° (275)	1°54'	175° (185)	—
90° (270)	1°55'	180° (180)	—

מקום ה'לילה - נחלקה  
... חלקים

$$\text{asin } \sin x/6$$



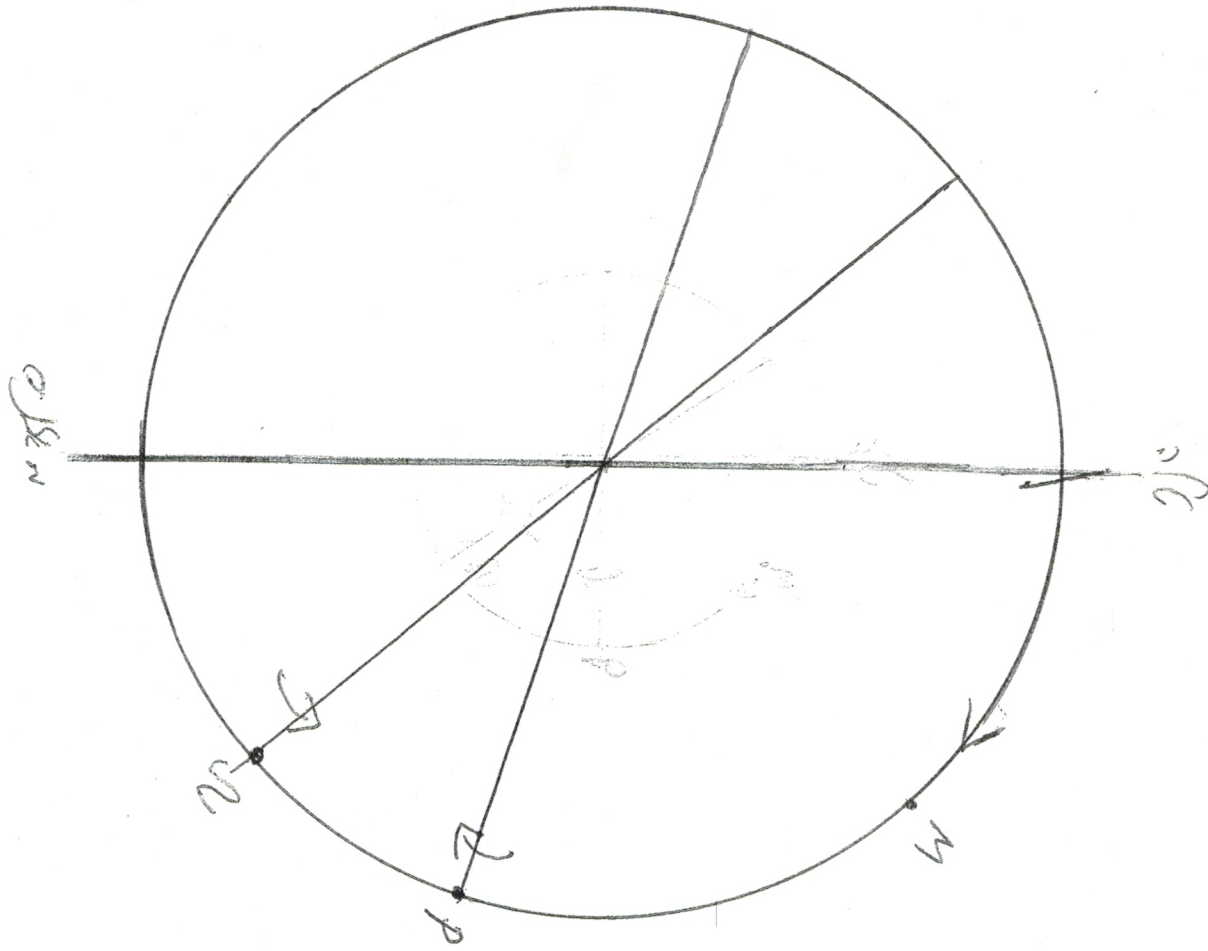
$$\tan \sin \text{ maslul} / 11.12 + \cos \text{ maslul}$$



sidereal month 27.321661547  
 tropical month 27.321582241  
 anomalistic month 27.554549878  
 draconic month 27.212220817  
 synodic month 29.530588853

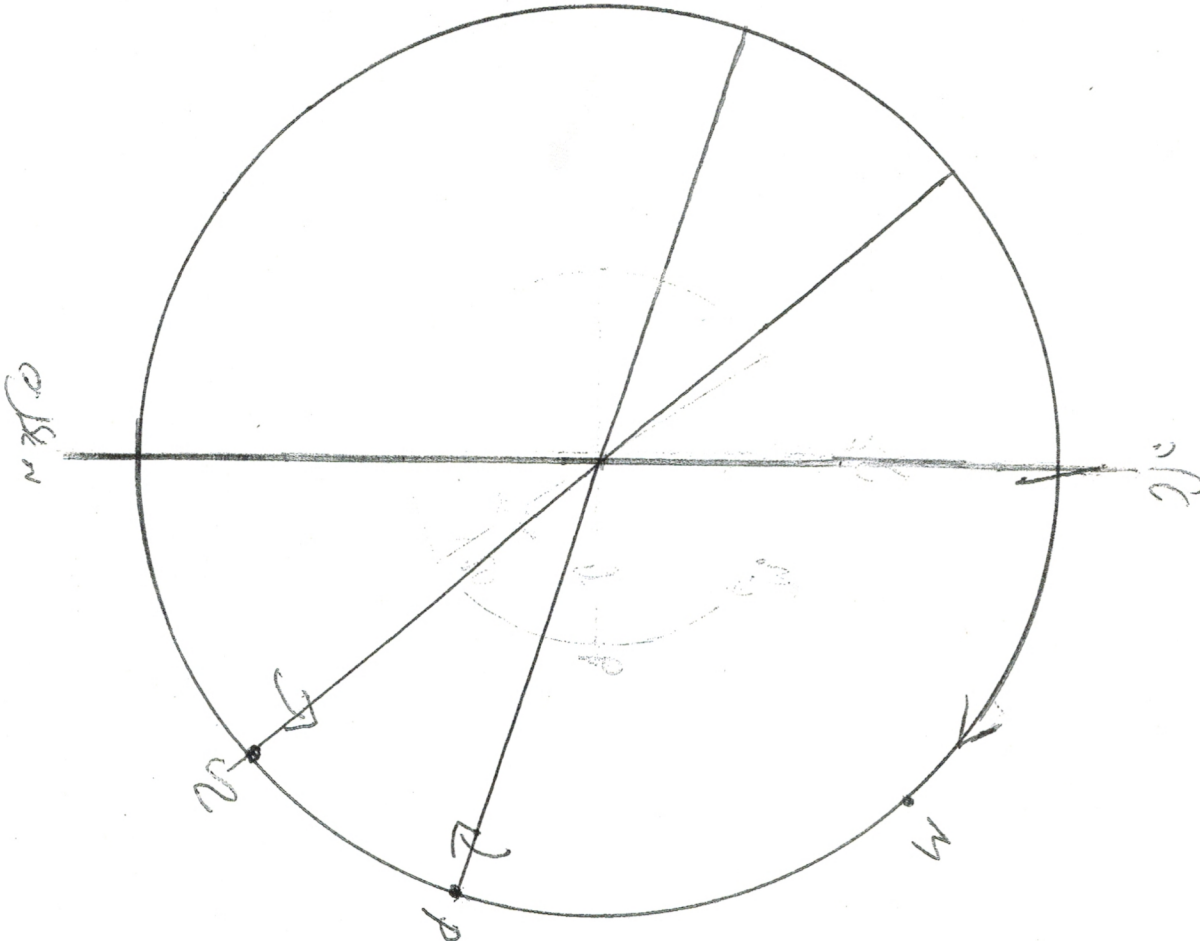
length of month

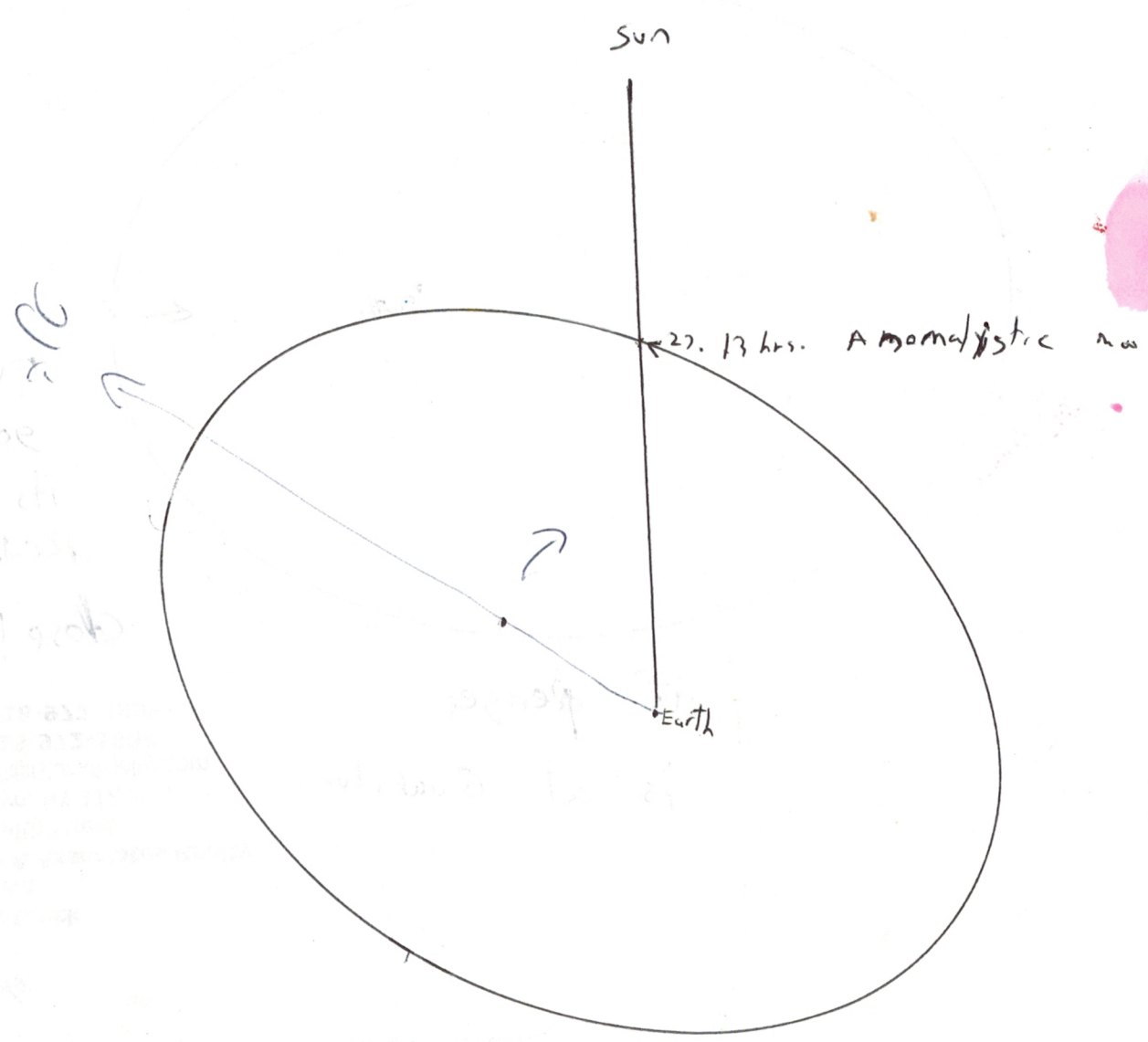
$P = 360^\circ$   
 $N = 360^\circ$   
 $n = 8.877$   
 $N = 18.6$  yr



sidereal month 27.321661547  
 tropical month 27.321582241  
 anomalistic month 27.554549878  
 draconic month 27.212220817  
 synodic month 29.530588853

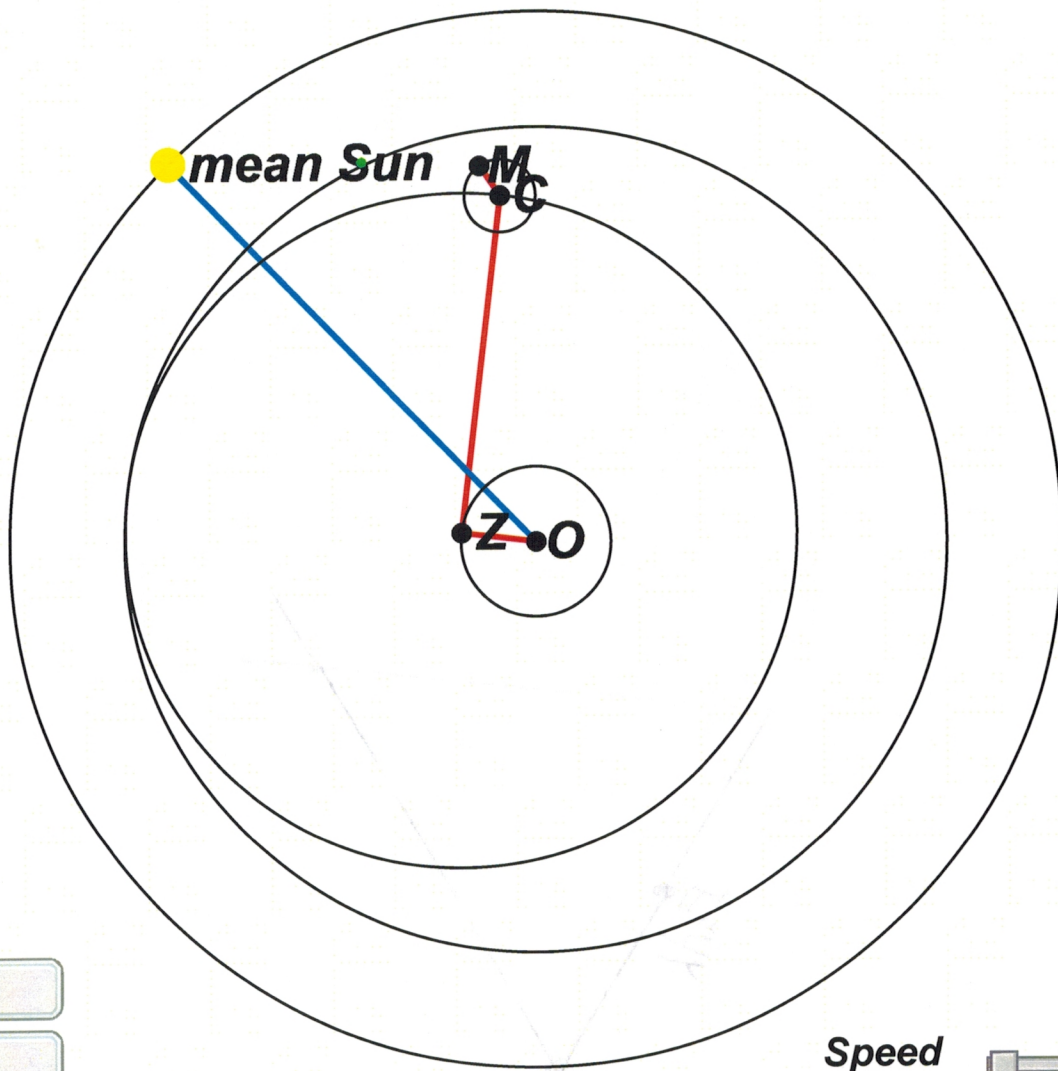
$P \approx 360^\circ$  in 8.84 yr  
 $N \approx 360^\circ$  in 18.6 yr





eviction depends  
on  $\neq$  mean.

speed of motion  
Average of "mean" and "extreme" values  
"mean" and "extreme" values  
"mean" and "extreme" values



### Trail on/off

clear trail

## Speed





0. 1. 2. 3. 4.  
0. 0.0824794 0.1649395 0.2473612 0.3297251

column 6 to 10

5. 6. 7. 8. 9.  
0.4120120 0.4942027 0.5762779 0.6582183 0.7400048

column 11 to 15

10. 11. 12. 13. 14.  
0.8216182 0.9030391 0.9842484 1.0652268 1.1459552

column 16 to 20

15. 16. 17. 18. 19.  
1.2264144 1.3065851 1.3864482 1.4659845 1.5451749

column 21 to 25

20. 21. 22. 23. 24.  
1.6240002 1.7024413 1.7804791 1.8580944 1.9352682

column 26 to 30

25. 26. 27. 28. 29.  
2.0119814 2.088215 2.1639499 2.2391672 2.3138478

column 31 to 35

30. 31. 32. 33. 34.  
2.3879728 2.4615232 2.5344802 2.6068249 2.6785384

column 36 to 40

35. 36. 37. 38. 39.  
2.749602 2.8199968 2.8897042 2.9587054 3.0269818

column 41 to 45

40. 41. 42. 43. 44.  
3.0945147 3.1612857 3.2272763 3.2924678 3.3568421

column 46 to 50

45. 46. 47. 48. 49.  
3.4203807 3.4830653 3.5448779 3.6058001 3.6658139

column 51 to 55

50. 51. 52. 53. 54.  
3.7249015 3.7830447 3.8402259 3.8964273 3.9516312

column 56 to 60

55. 56. 57. 58. 59.  
4.0058201 4.0589766 4.1110832 4.1621229 4.2120783

column 61 to 65

5/20/20  
RbH  
6

60.	61.	62.	63.	64.
4.2609327	4.3086691	4.3552707	4.400721	4.4450036

column 66 to 70

65.	66.	67.	68.	69.
4.488102	4.5300003	4.5706823	4.6101324	4.6483347

column 71 to 75

70.	71.	72.	73.	74.
4.685274	4.7209349	4.7553023	4.7883615	4.8200976

column 76 to 80

75.	76.	77.	78.	79.
4.8504964	4.8795436	4.9072251	4.93335274	4.9584369

column 81 to 85

80.	81.	82.	83.	84.
4.9819404	5.004025	5.024678	5.043887	5.06164

column 86 to 90

85.	86.	87.	88.	89.
5.0779251	5.092731	5.1060465	5.1178608	5.1281634

column 91 to 95

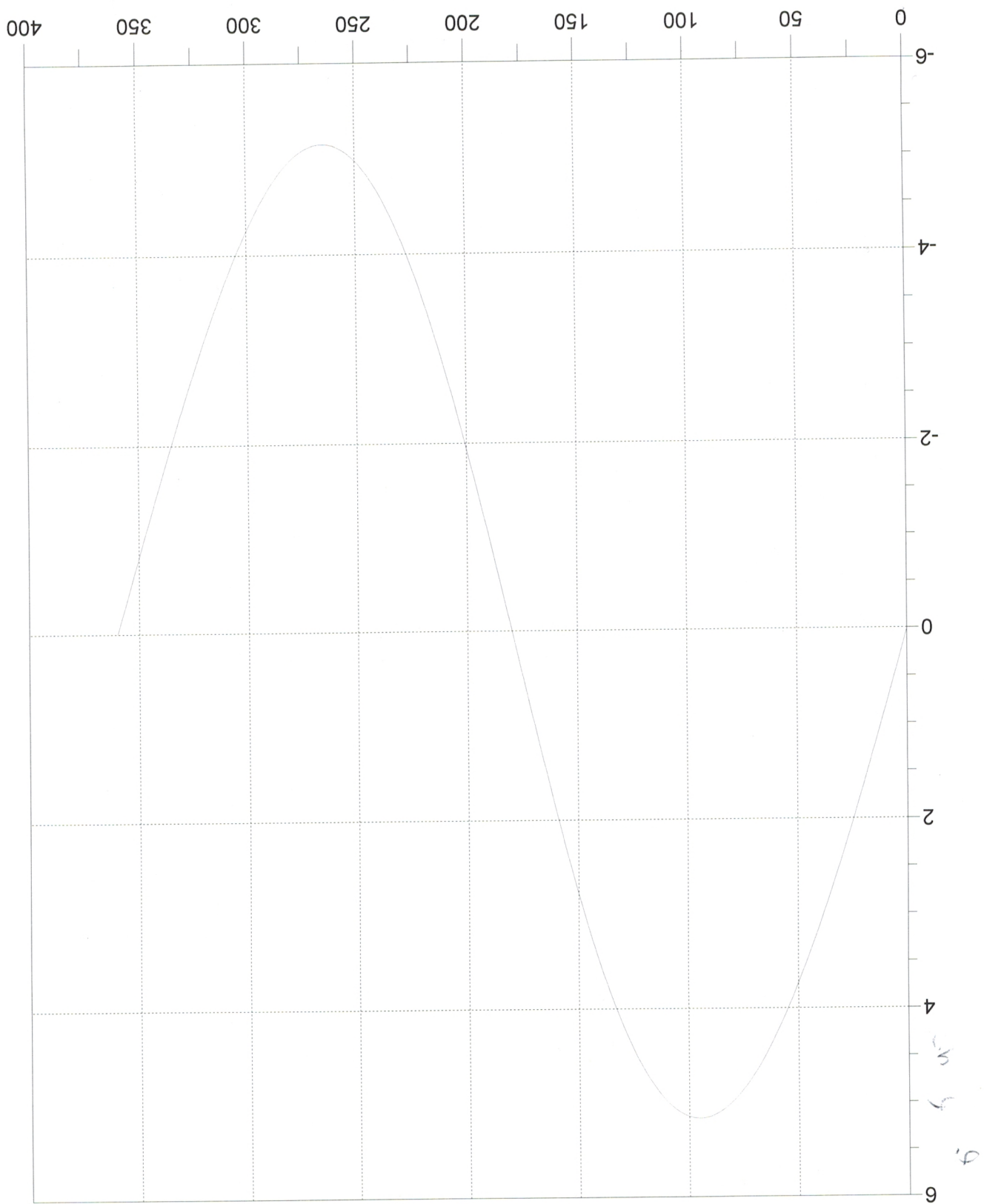
90.	91.	92.	93.	94.
5.1369443	5.1441938	5.1499025	5.1540614	5.1566621

column 96 to 100

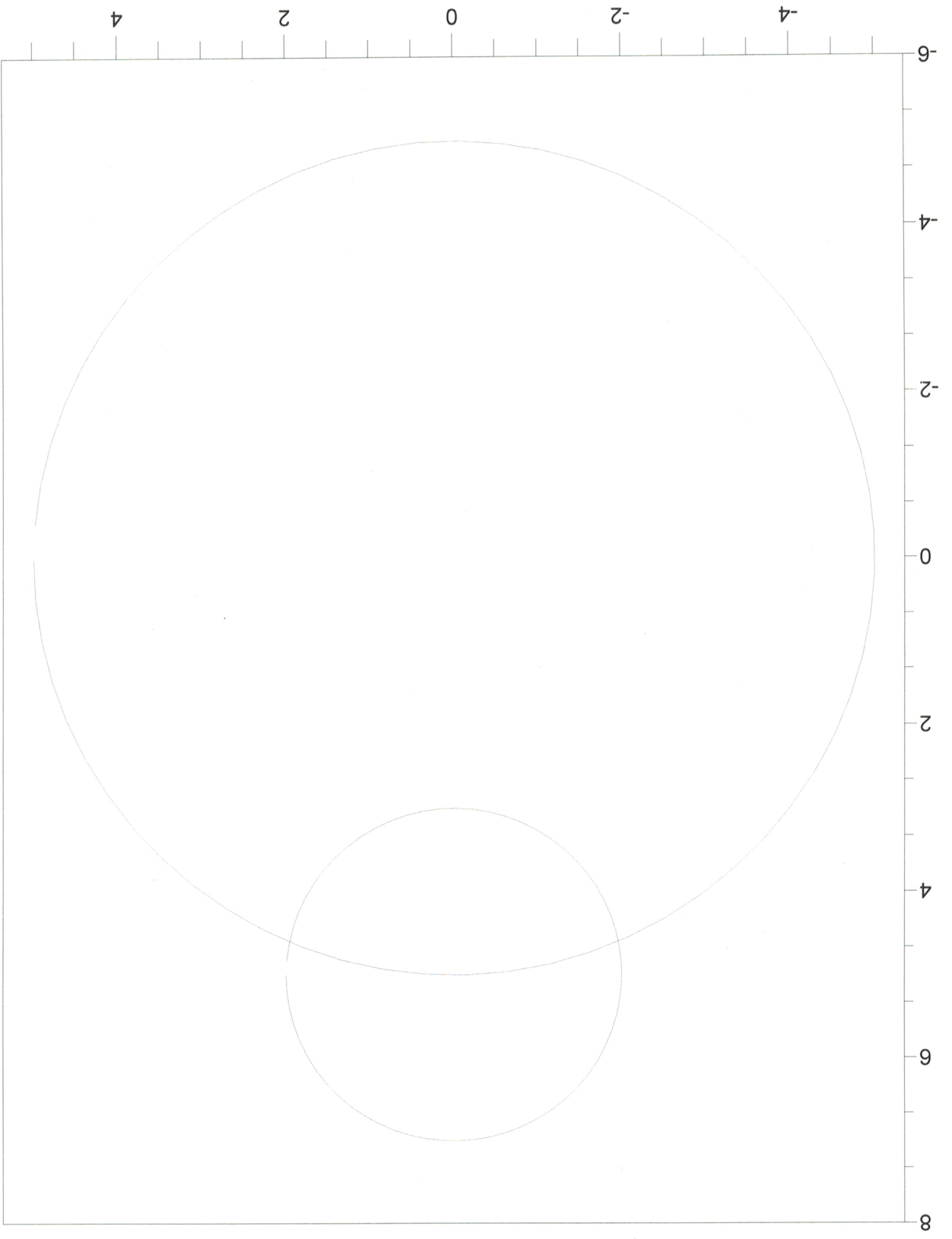
95.	96.	97.	98.	99.
5.1576963	5.1571563	5.1550349	5.1513251	5.1460207

column 101

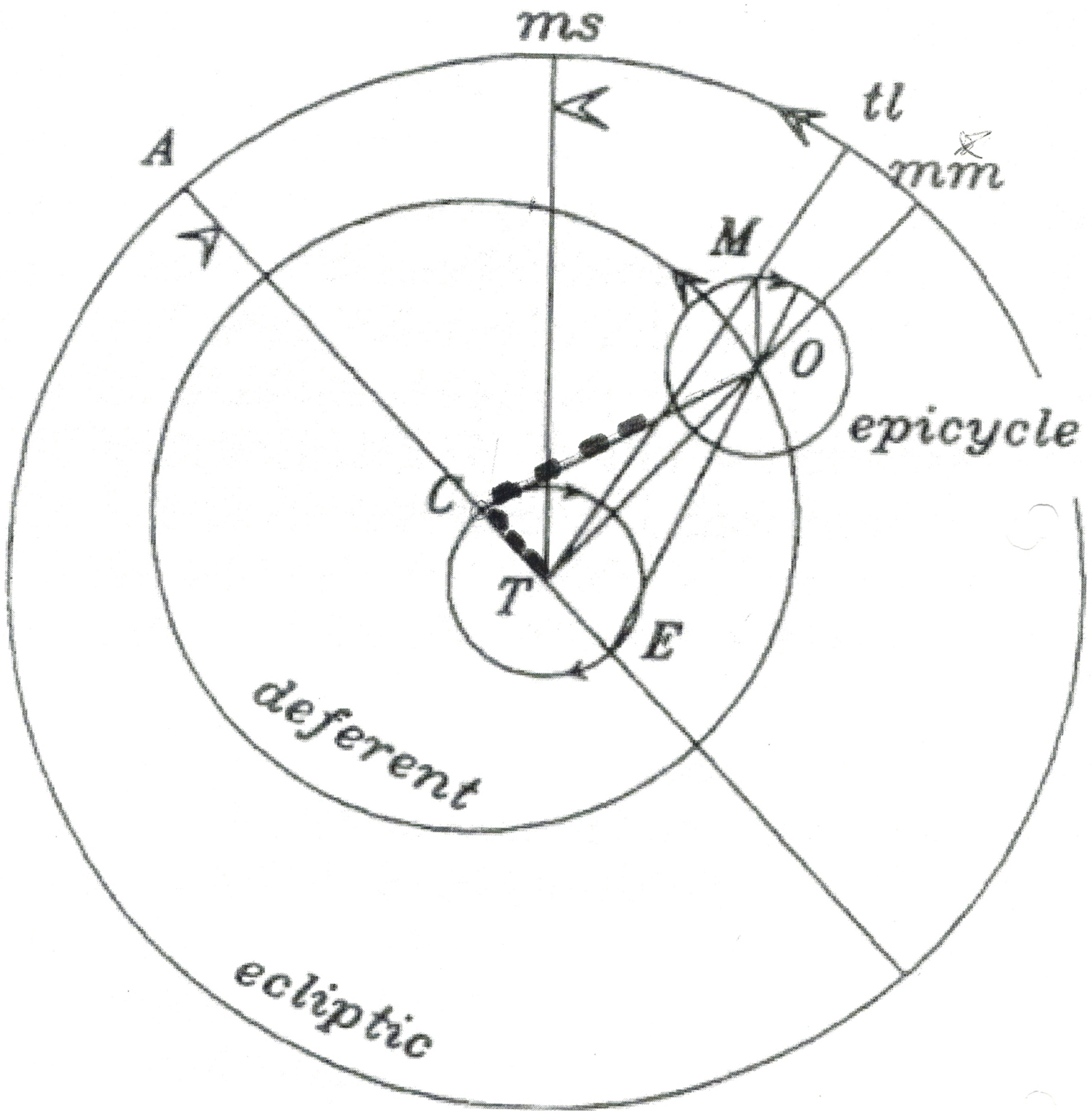
100.
5.1391155







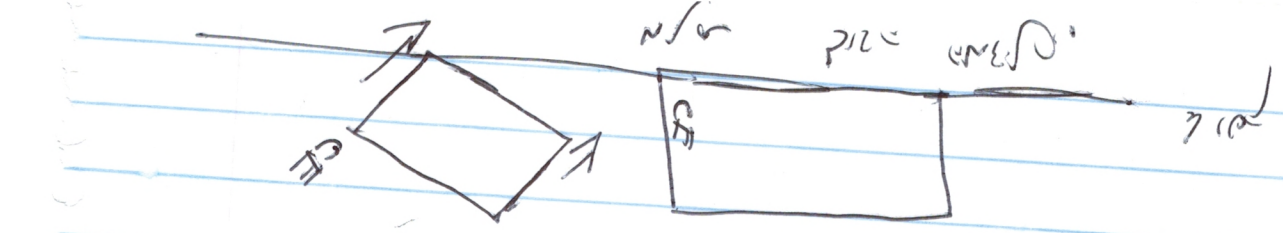
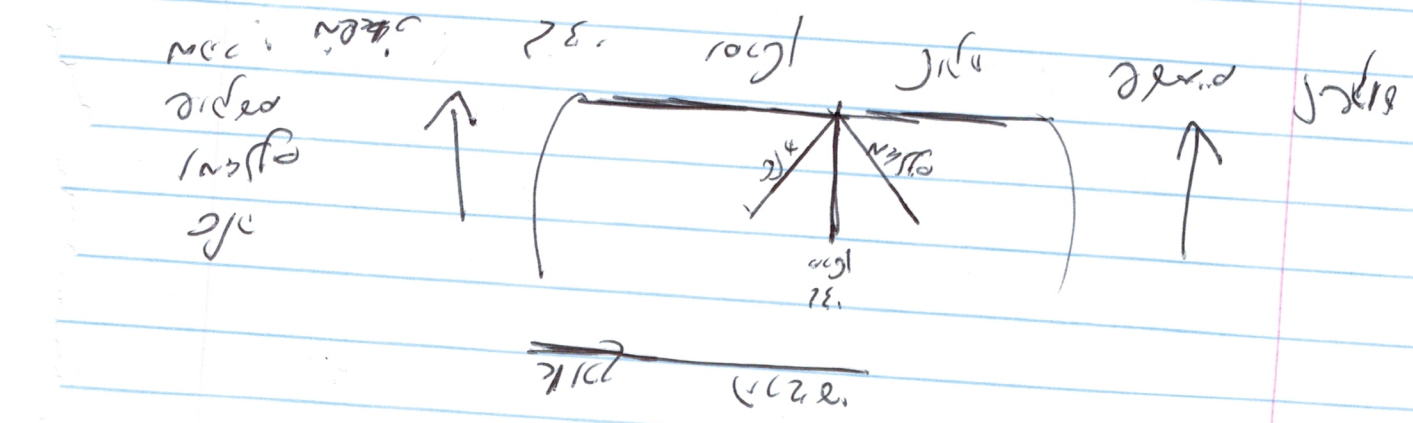
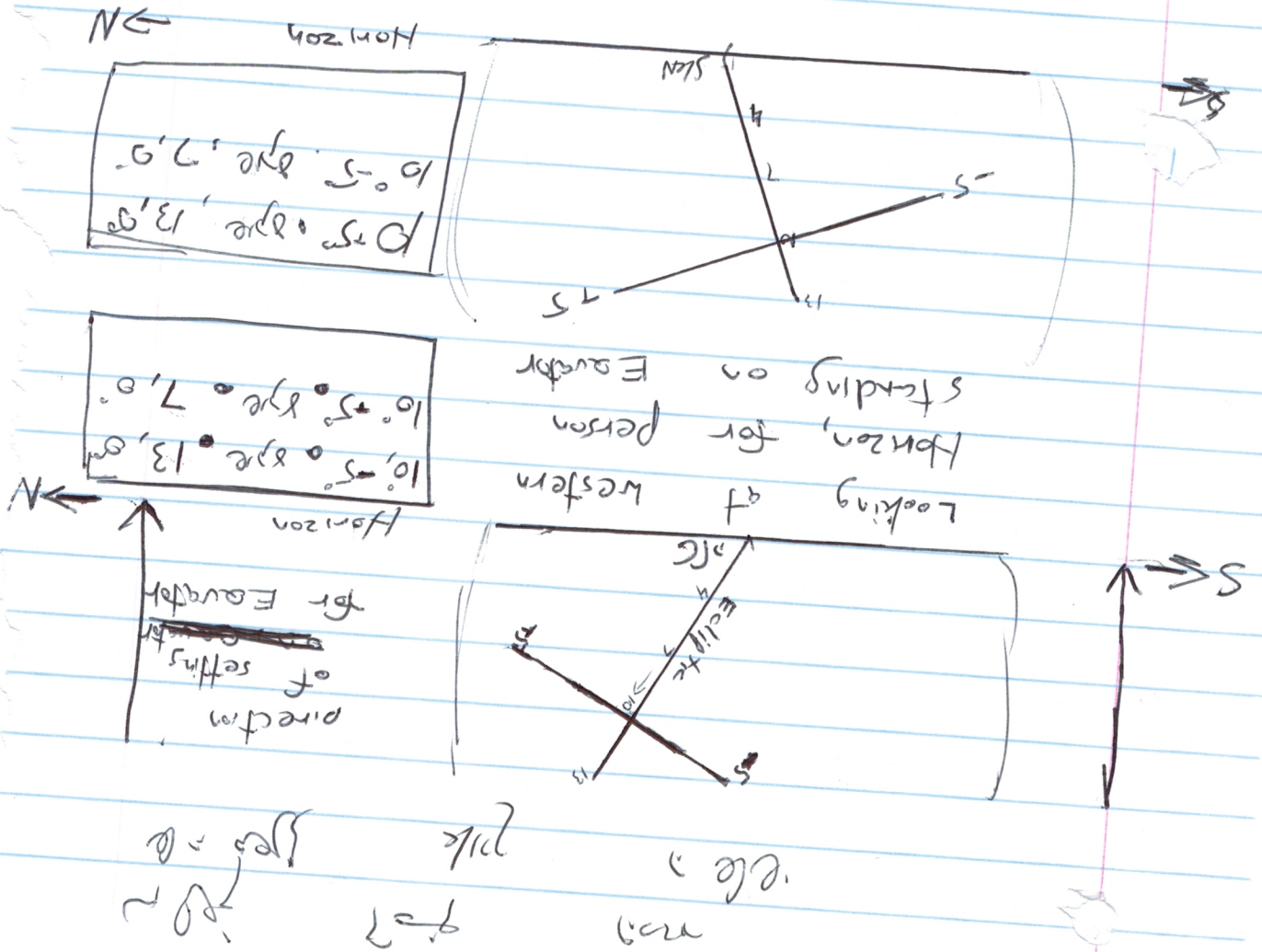
$$T = 9,1 \text{ K}$$



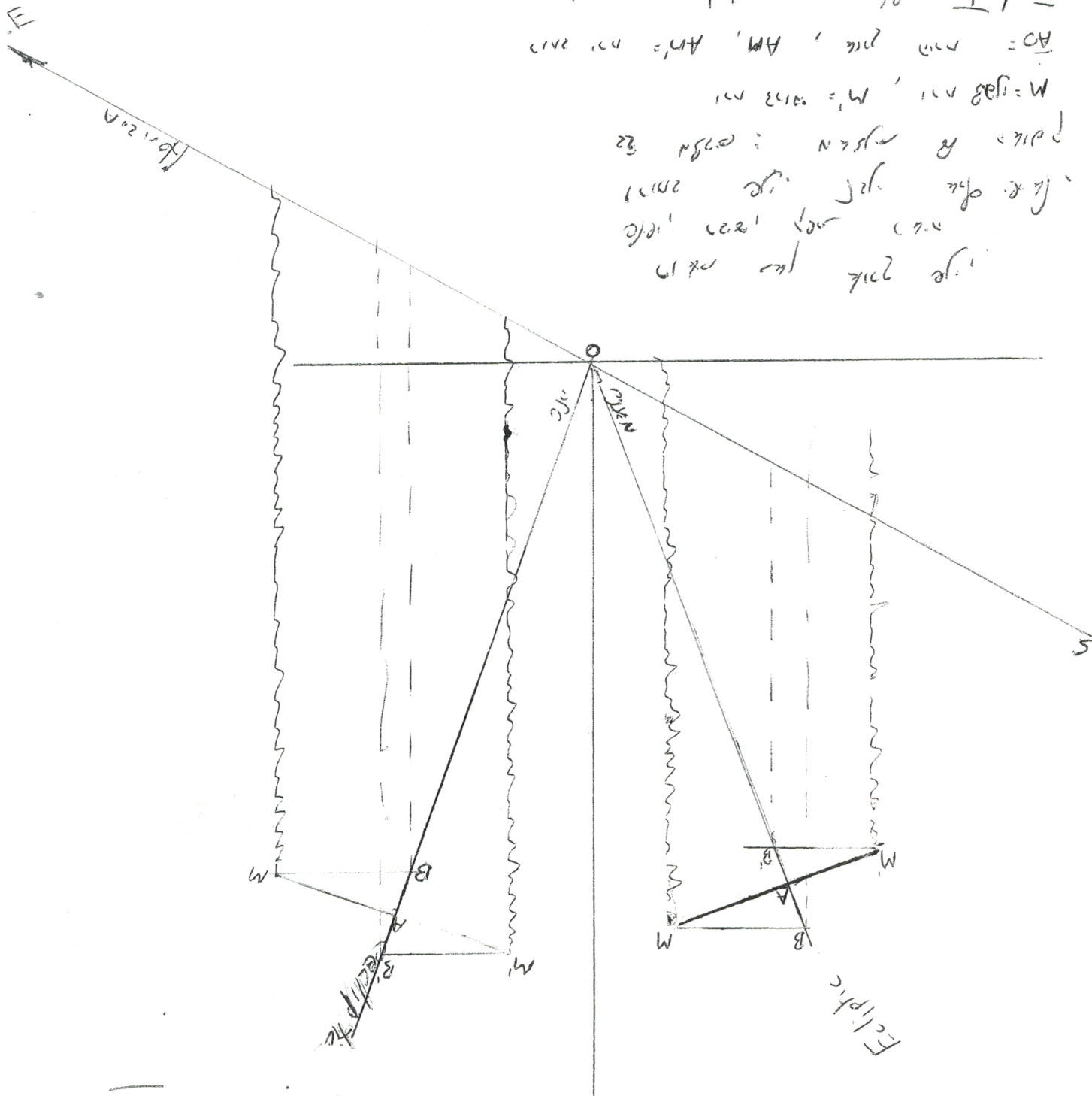
Ans: Mean Sun  
AM: " mean  
-6 = five long, legs

10 4x  
Aco

2006	'erihelion Jan 4 15 Equinoxes Mar 20 18 26 Sept 23 04 03 p'helion July 3 23 Solstices June 21 12 26 Dec 22 00 22	2007	'erihelion Jan 3 20 Equinoxes Mar 21 00 07 Sept 23 09 51 p'helion July 7 00 Solstices June 21 18 06 Dec 22 06 08	2008	'erihelion Jan 3 00 Equinoxes Mar 20 05 48 Sept 22 15 44 p'helion July 4 08 Solstices June 20 23 59 Dec 21 12 04	2009	
------	---	------	---	------	---	------	--



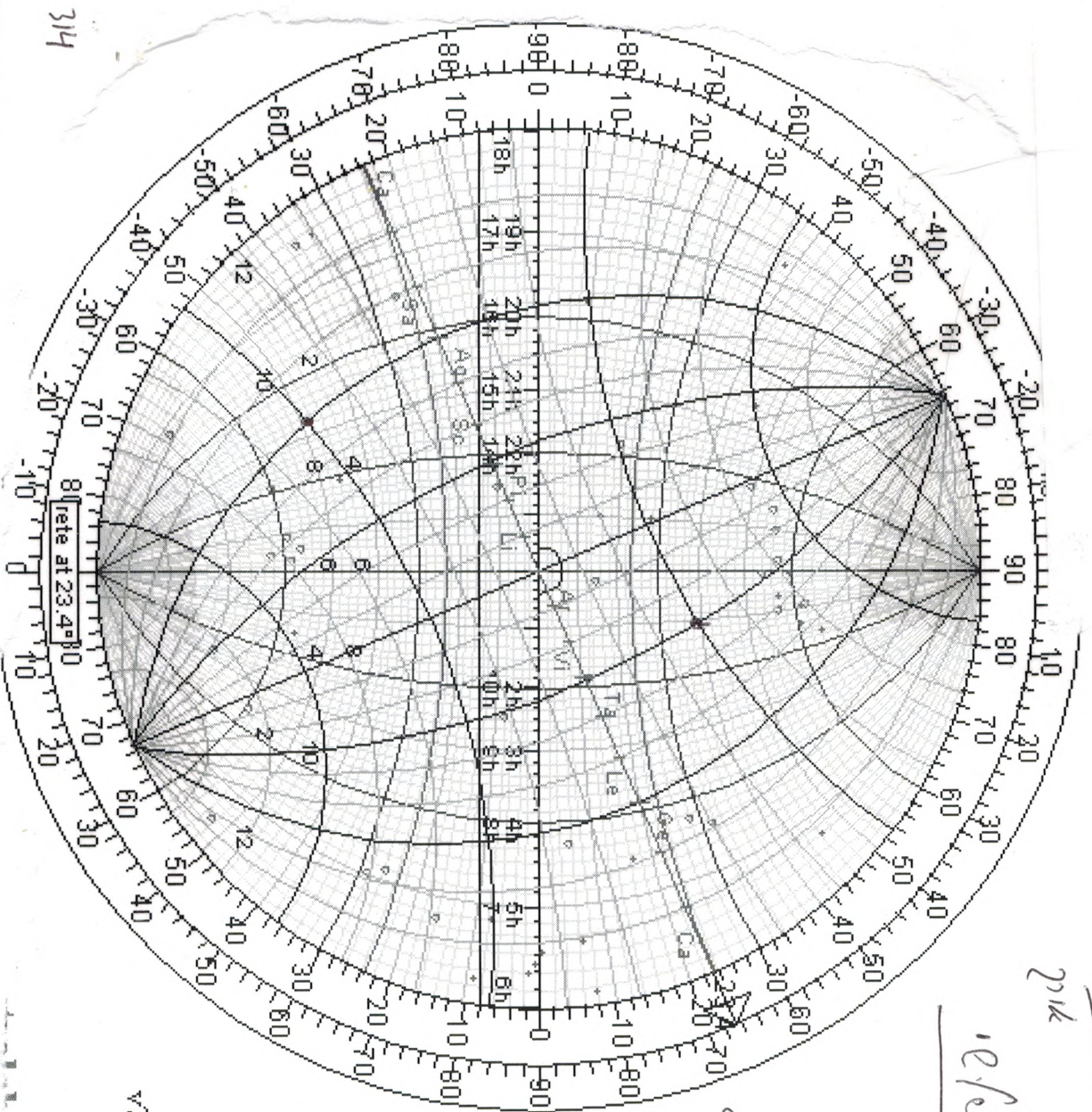




- 1) Convert ecliptic coordinate into RA
- 2) Find ecliptic point, with same RA (usually within  $\pm 2^\circ$ )

ecl.  $300, -30$   
 RA =  $314, -50$   
 point on ecl.  $< 314$

or ecl.  $240, -30$   
 RA  $226, -50$   
 point on ecl.  $> 226$



302  
 120  
 120

ecl.  $30, 30$   
 RA  $15, 4$   
 point on ecl  $> 15$   
 or  
 ecl.  $150, 30$   
 RA  $165, 4$   
 point on ecl.  $< 165$

v74